

# A “Topsy (TPS-75)-Turvy” Problem



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## Part I: Overview of Business

- Formed in 1838
- Commanders-in-Chief:  
President of US (Federal) &  
Governor (State)
- Made up of Army and Air  
Guard Units

## Part II: Job Specifics

- 133d Test Squadron
- Operates TPS-75 Radar
- Used for air defense
- Can be transported or  
deployed on 2 5-ton trucks
- Has a 270 mile range



## Part III: Introduce the Problem

- TPS-75 Van has two rooms
- One houses electronics and  
Radar operators and has AC
- One houses EM pulse and  
needs to have AC but has  
dangerous gases/radiation
- Create duct system to cool  
both systems w/o crossover

## Part IV: Background

- Know how air flows
- Know you can split ducts
- Know electronics and  
people generate heat
- Know how volume of air  
and heat generated vs.  
cooling effect works
- Know that added material  
means harder to transport

## Part V: Business Solution

- The Radar Maintenance  
crew have yet to create a  
solid solution
- Testing some solutions

## Part VI: Student Solutions

- Try and divert air from one  
duct to another duct system
- Add additional air  
conditioners or generators